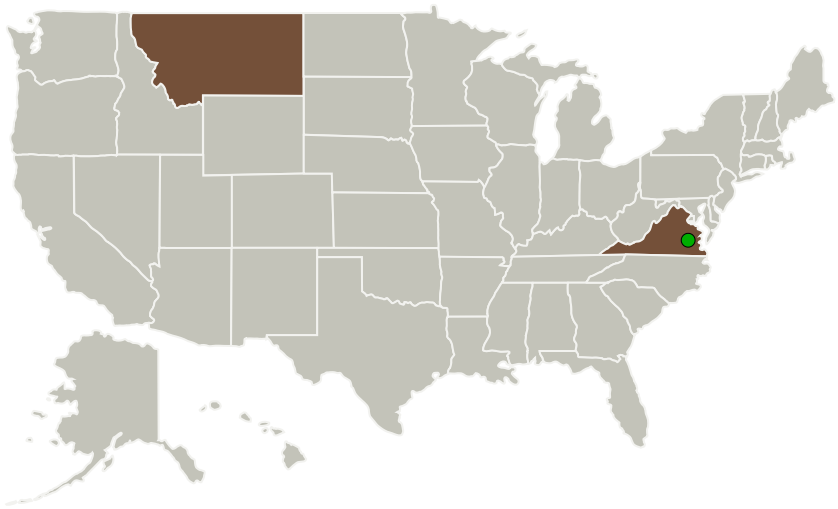
Lunar Spectral Irradiance Monitor, Phase II

Completed Technology Project (2017 - 2020)

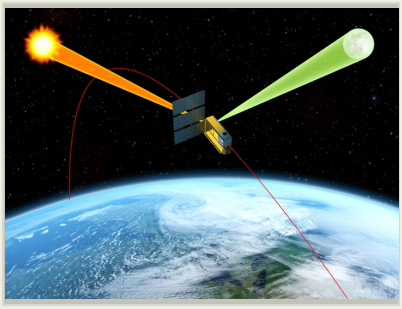
Project Introduction

The purpose of this effort is to develop an instrument to accurately calibrate (1% k=2) the lunar spectral reflectance (350 to 2,300 nm) at relatively low expense from a small satellite. Assuming the TSIS missions are successful and the solar irradiance is known, the lunar spectral reflectance can be used to provide known lunar irradiance, thereby providing a stable exo-atmospheric calibration source for earth-viewing instruments on low earth orbit satellites. The proposed instrument has been designed specifically for calibrating the lunar irradiance. It is compact, simple in concept, and the data product is nearly immune to long-term degradation because it collects solar and lunar signals using the same optics in the same way. During this effort a prototype instrument will be developed, tested, and evaluated. Design reviews will be conducted and a plan will be made for a next-generation instrument.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Resonon, Inc.	Lead Organization	Industry	Bozeman, Montana
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



Lunar Spectral Irradiance Monitor, Phase II Briefing Chart Image

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Primary U.S. Work Locations	
Montana	Virginia

Project Transitions

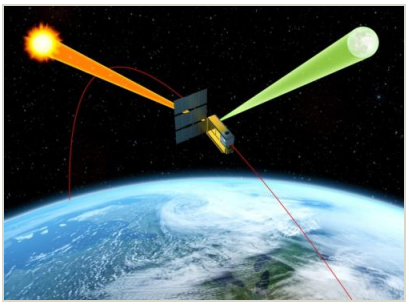
July 2017: Project Start

January 2020: Closed out

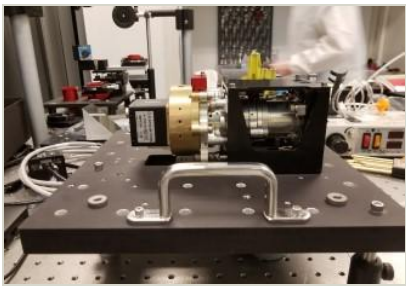
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140861)*

Images



Briefing Chart Image
Lunar Spectral Irradiance Monitor, Phase II Briefing Chart Image *(https://techport.nasa.gov/image/133052)*



Final Summary Chart Image
Lunar Spectral Irradiance Monitor, Phase II
(https://techport.nasa.gov/image/130183)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Resonon, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

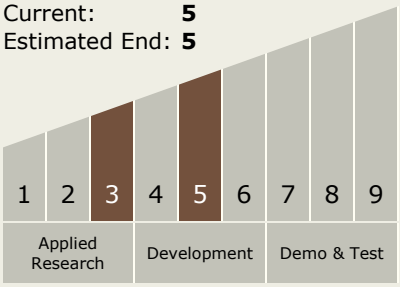
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Rand Swanson

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Completed Technology Project (2017 - 2020)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.3 Optical Components

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System